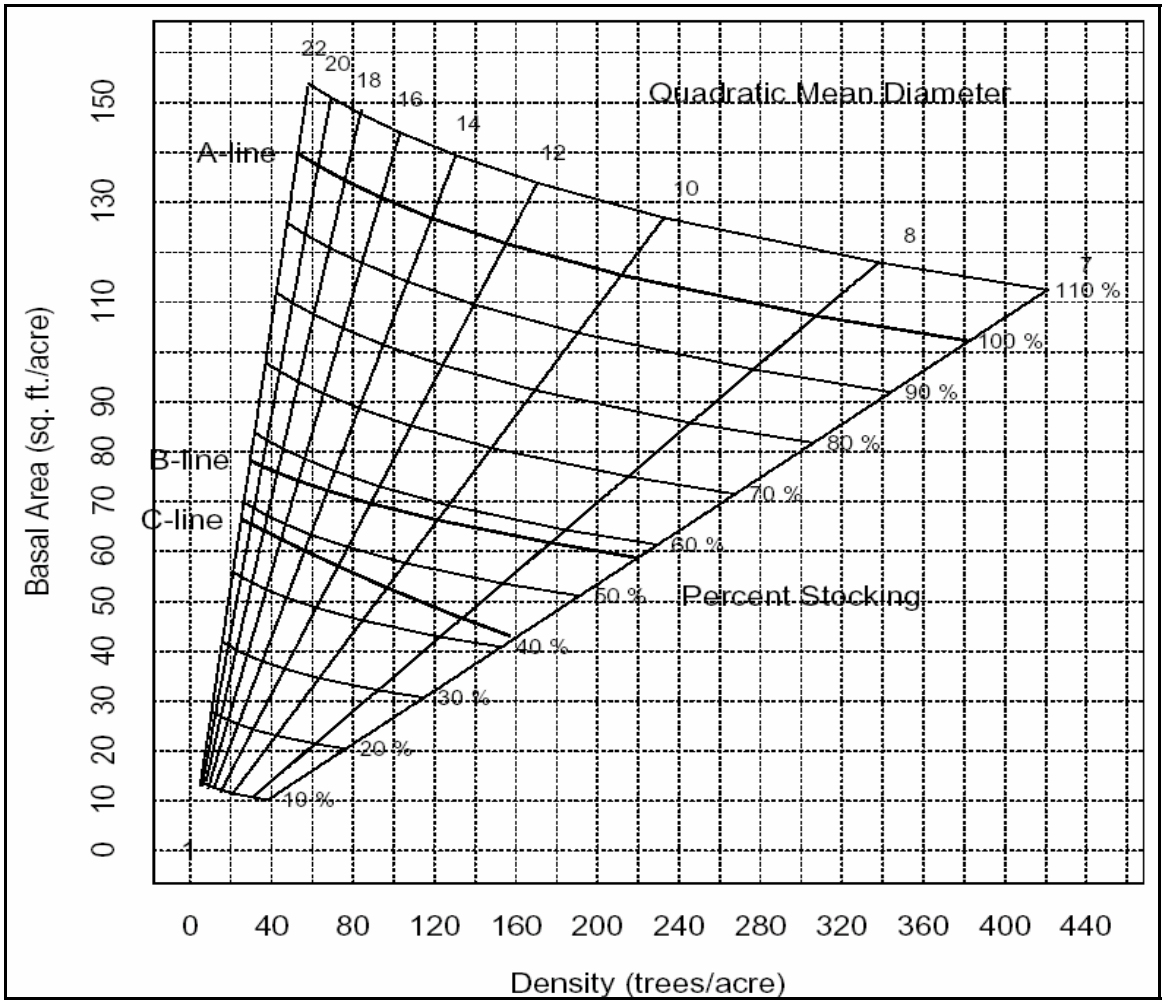
Relation of basal area, number of trees, and average tree diameter to stocking percent



Source: Gingrich, S. F. 1967. Measuring and evaluating stocking and stand density in Upland Hardwood forests in the Central States. For. Sci. 13:38-53.)

The diagram illustrates the relationship between basal area per acre, density (trees per acres), and the diameter of the tree of average basal area:

- The **A-line** is based on a fully stocked stand that has never been thinned. Trees in stands above 100% are considered crowded, too slow growing for normal forest management, and overstocked.

- The **B-line** is the point of full site occupancy with trees of maximum tree area. A stand on the B-line is thought to have trees with no competition, yet no space wasted. The area between the A-line and the B-line indicates the range of stocking where trees can fully utilize the site and should be considered fully stocked. Typically, the 80% stocking level is a good midpoint to choose for adjusting an overstocked stand to a fully stocked stand. This is because opening the stand too much (down to the B-line) could cause windfall or adverse effects.

The **C-line** is an estimate based on normal yield table of the lowest stocking that will grow to the B-line within ten years. This area of the chart is considered understocked.